

# Too close for comfort

## Aquatic aliens poised to invade New Mexico

By Reese Brand Phillips

For centuries humans have transported plants and animals around the globe, moving species from their native lands and introducing them to new areas. Many of these "alien" species have been intentional introductions, such as wheat, cattle and roses, while others are hitchhikers, stowing away on our ships and in our cargo.

Most alien species have caused no discernable harm, and many are beneficial, providing food, clothing and enjoyment for humans. Yet a small percentage of these alien species become invasive, spreading rampantly and causing great economic and ecological harm.

Researchers at Cornell University in a study in 2000 estimated that 50,000 alien species in the United States caused losses totaling \$137 billion a year.

Aquatic invasive species are a particularly injurious subset of invaders because of their impacts on our hydrologic systems and aquatic habitats. They alone account for \$9 billion of losses annually.

New Mexico has not escaped these invaders, but so far the state's arid environment and relative isolation have protected it from most of the impacts of aquatic invasive species. Consider Florida, which has 49 aquatic alien plant species, compared to New Mexico's seven species. One single aquatic weed, hydrilla, costs Florida almost \$15 million annually to control it in ponds and waterways. Fortunately, hydrilla has not invaded New Mexico yet, but several rivers in Texas are infested with it, and many of those rivers originate in our state.

New Mexico has been invaded by several aquatic weeds and algae, and we are



Photos courtesy Michigan Sea Grant



**Zebra and quagga mussels cause billions of dollars of damage and economic losses a year by clogging water system pipes and clinging to boats and other watercraft. First discovered in the Great Lakes region, the thumbnail-sized aquatic invasive species now have spread as close as Colorado and Arizona.**

the state in the 1980s and is found in the lower Pecos River and several reservoirs on this drainage. Though not dangerous to humans, golden alga produces a toxin that kills gill-breathing animals and has recently caused the death of thousands of fish in McAllister, Bataan, Brantley, and Carlsbad Municipal reservoirs.

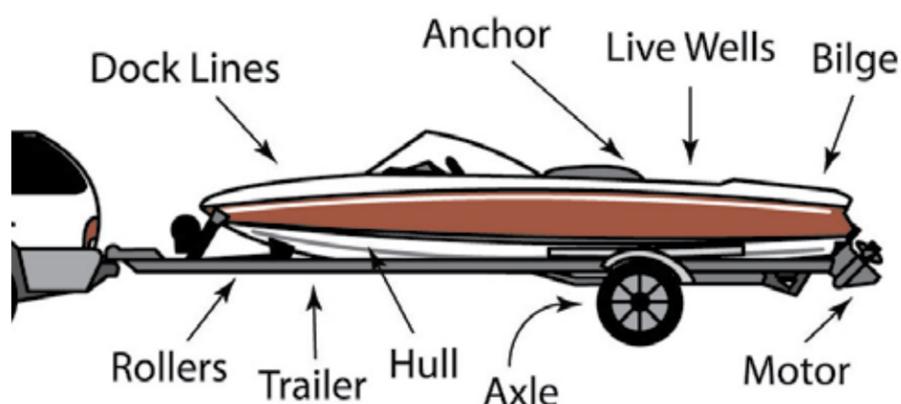
beginning to feel their effects.

- Eurasian water-milfoil is found in several river systems, including the Rio Grande, Rio Chama and the Gila.
- Golden alga is another aquatic invasive species found in New Mexico. It invaded

- Whirling disease is another recent invader to New Mexico. First detected in the state in 1998, it is now found in many of our rivers. This parasite infects young trout, eventually crippling them. In Montana, whirling disease has caused a 90 percent decline in trout populations in some rivers.

Before Launching...  
Before Leaving...

### Inspect Everything!



## You can help

Please follow these simple steps to help prevent alien mussels from invading New Mexico:

- Remove visible mud, plants, fish or other debris before transporting equipment.
- Eliminate all water from your boat and equipment before transporting it anywhere.
- Clean and dry everything that came in contact with water, including boats, trailer, equipment, clothing, waders, dogs, etc.
- Never release plants, fish or

other animals into a body of water unless they came from that same body of water.

For more information about aquatic invasive species, please contact Brian Lang with the Department of Game and Fish at (505) 476-8108 or [brian.lang@state.nm.us](mailto:brian.lang@state.nm.us) or visit these internet sites:

- [www.fws.gov/answest](http://www.fws.gov/answest)
- [www.protectyourwaters.net](http://www.protectyourwaters.net)
- [www.anstaskforce.gov/default.php](http://www.anstaskforce.gov/default.php)
- <http://invasivespecies.nbio.gov/index.html>

Although these invaders threaten our wildlife and waterways, potentially greater, more insidious threats, zebra and quagga mussels, are at our borders, poised to invade. Native to Eurasia, these fingernail-sized mussels were first discovered in the United States in the late 1980s in the Great Lakes region. Both likely arrived via ballast water in ships arriving from the Black Sea.



In less than a decade, zebra mussels invaded 19 states in the Mississippi River drainage and are now found in the Missouri and Arkansas

Rivers. Quagga mussels are less widespread, found primarily in the Great Lakes region. But in 2007, after a decade of efforts to contain the infestation to the Midwest and eastern United States, quagga mussels were discovered in lakes Mead, Havasu and Mojave on the lower Colorado River.

## On our doorstep

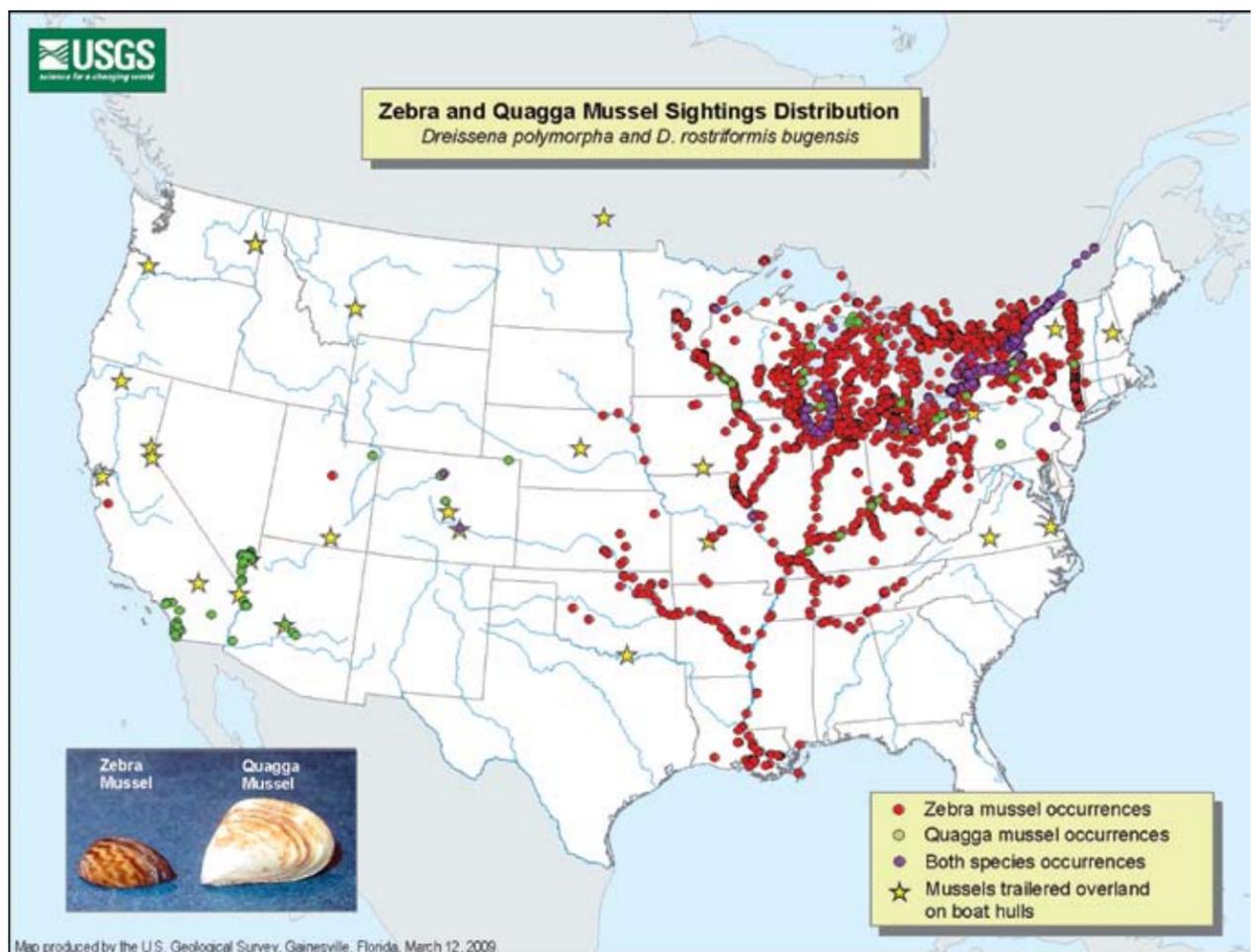
In November 2007, zebra mussels were found in Colorado's Pueblo Reservoir, less than 90 miles from the New Mexico border, and in January 2008 they were reported in central California's San Justo Reservoir.

Under natural conditions, quagga and zebra mussels colonize new areas by dispersing larvae (veligers) via the currents in rivers and lakes. But, these three new introductions into our western waters demonstrate the mussels' ability to colonize new areas by overland routes. Larvae and adults can survive for days out of the water on trailered boats. Safe haven for larvae and adults is provided by vegetation clinging on boat hulls and motors, as do live wells, bait buckets and engine cooling systems of boats.

If quagga mussels can survive the almost 1,400-mile trip from the nearest infested waters of the Mississippi River, how safe is New Mexico from an invasion from western Arizona? Zebra mussels made a similar journey from the Midwest to California and are now knocking on Raton's door.

## Why should you care?

If you are an angler, boater, farmer, environmentalist, or if you use water in any way, then letting quagga or zebra mussels into our waterways will affect you. Where present, these mussels usually occur in enormous numbers. They produce millions microscopic larvae that float freely on currents and attach to any object or substrate,



**Invasive zebra and quagga mussels can survive for days out of water and hitch rides to other parts of the country aboard boat hulls and motors, and in live wells, bait buckets and boat engine cooling systems.**

including boat hulls, buoys, pipes, even other animals such as crayfish and turtles. In one area of the Great Lakes, zebra mussels reached densities of 700,000 individuals for every square meter.

Both species impact municipalities by clogging water-supply pipes to water treatment and hydroelectric plants and industrial facilities, costing millions annually in prevention and maintenance. Boaters are affected as well, experiencing high fuel cost from increased drag on their hulls. Small mussels also can enter engine cooling systems, causing damage. A 2003 study found that both species cost \$1 billion annually in control costs in the United States.

Impacts from the invasive species are not restricted to economic costs. Quagga and zebra mussels filter the water, feeding on phytoplankton-microscopic plants. Due to their huge numbers, they remove enormous quantities of phytoplankton and other particulates, initially clearing the water. Unfortunately, this apparent benefit has significant drawbacks. The increased water clarity allows aquatic plants to proliferate, and the plants eventually die and wash ashore. Homeowners in the Midwest and Great Lakes region complain of rotting, stinking masses of dead vegetation on their shorelines.

## Threats to wildlife

Quagga and zebra mussels also impact native wildlife. They compete with native mussels by reducing their food supply and smother them by attaching to their shells. Fish populations may also be affected, as quagga and zebra mussels compete with bait fish such as minnows and shad for food. This in turn may impact game fish, such as bass and trout.

Quagga and zebra mussels appear capable of surviving in most lakes and rivers in New Mexico. However, several bodies of water within the state are high-risk areas.

Navajo Reservoir is a frequent stop for boaters traveling from lakes on the lower Colorado River, making it especially vulnerable to invasion by quagga mussels. Similarly, boaters on Pueblo Reservoir often travel to reservoirs of eastern New Mexico, such as Conchas, Santa Rosa and Ute, making those waters high-risk areas for invasion of zebra mussels.

It is critical to keep the Rio Grande free of alien mussels. The river traverses the entire state and is the physical life blood of New Mexico. If quagga or zebra mussels invade any portion of the river, they could invade the entire drainage.

New Mexico's Department of Game and Fish and the State Parks Division are working with other agencies, including the U.S. Fish and Wildlife Service, to keep the invaders out of the state. But our enforcement agencies are limited in their ability to keep alien species out of our waters. They need your help to prevent these alien species from invading our waters and threatening our economy and natural resources.

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